A STUDY OF INDUSTRIAL ARTS IN THE ELEMENTARY SCHOOLS

RUBY A. DODD

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Florida Southern College.

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IN THE

ELEMENTARY SCHOOLS

RUBY A. DODD

Submitted in partial fulfillment of the requirements for the degree of Master of Arts in the Graduate School of Florida Southern College

August 1948

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Southern College

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PHILOSOPHY

The philosophy of the elementary teacher is one of encouraging and respecting self-expression. She realizes that her job is not that of producing industrial arts, but it is the task of developing intelligent, appreciative consumers of art. She understands that far more important than the work of industrial art itself is what the work of art does for the child, not only at the moment when an object is finished, but in the general development of a healthy, happy, intelligent member of society.

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ACKNOWLEDGMENTS

The writer wishes to express her deep appreciation to Dr. Murry, Professor Thompson, and Professor Springer for their sustained interest, helpful guidance, and patience throughout the course of this study.

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APPROVAL SHEET

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CHAPTER I

TECHNIQUE OF THE INVESTIGATION

The Problem

General Statement

This study has been undertaken in order to determine the values, to the child, to the community, and to the teacher, of including industrial arts in the elementary school curriculum.

Specific Problem

What is the purpose of industrial arts in the elementary curriculum? It has been attempted to approach this problem in such a manner that the final results will be helpful to the teaching profession.

Other problems to be considered include the ability of the child at various ages, to acquire knowledge and relative skill in, and to derive pleasure from, the different types of handcraft. It should be discovered whether or not the child will be better able to understand and cope with his own environment while he is in the process of acquiring a creative and

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practical understanding of past and present cultures.

Basic Hypothesis

Several points have been brought out in this work. Studies made in the past indicate that within the child lies the fundamental urge to create, and that he will learn more easily and with more pleasure from a concrete approach to a problem which will give this creative urge expression, than he will from an abstract presentation. It seems probable that this premise should be particularly applied to the child in elementary school, who is still in the process of learning the physical facts of the world about him, and who is still in the process of perfecting his own physical coordination. He needs a constructive outlet for the motor activity which is a predominant feature of this stage of his development. He has an inquiring mind, but often lacks the experience necessary to derive satisfactory stimulation from abstract ideas.

Delimitations

Since the study of industrial arts is already well established in the field of secondary and higher education, it was considered desirable to limit this research to elementary schools, grades one through six. Particular effort has been made to apply conclusions reached to the schools of Hillsborough

practical workmanship in part and present entirely.

Main Characteristics

Several points have been brought out in this work. Studies made in the past indicate that within the adult lies the fundamental urge to creative, and that he will learn more easily and with more pleasure from a creative approach to a problem than if given this creative urge suppressed, than he will from an content presentation. It seems probable that this problem should be particularly applied to the adult in-service teacher, who is still in the process of learning the practical facts of the world about him, and who is still in the process of performing his own physical creations. It seems a tempting study for the author subjectively which is a presentment from one of this phase of his development. He has an identity with, but often lacks the experience necessary to derive satisfactory characteristics from another phase.

Conclusions

Since the study of industrial arts is already well established in the field of secondary and higher education, it was considered desirable to limit this research to elementary schools, grades one through six. Particular effort has been made to apply correlations revealed in the schools of Bellingham.

County, Florida.

Although research has been made, and courses of study planned and adopted in some instances, it would seem that the industrial arts aspect of elementary education has been neglected in recent years. This is particularly true with respect to organized plans of teaching which would correlate the subject with the other courses of study.

Definition of Terms

Industrial arts, as considered in this thesis, have been defined as follows: "As a subject for educative purposes, industrial arts is a study of the changes made by man in the forms of materials to increase their values, and of the problems of life related to these changes."[1]

The industrial arts may be studied either with a general educational purpose in mind or in order to develop skill in a particular industry. The latter--vocational training--of course has not been considered in relation to the elementary school.

It is also necessary to make a distinction between industrial arts and the fine arts, although the two are very closely allied. Fine arts may be said to be concerned solely

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1. Frederick G. Bonser and Lois Coffey Mossman, Industrial Arts for Elementary Schools. p. 5.

country, Finnish.

Although research has been made, and courses of study planned and adopted in some institutions, it would seem that the industrial arts aspect of elementary education has been neglected in recent years. This is particularly true with respect to organized plans of teaching which would correlate the program with the other phases of study.

Industrial Arts

Industrial arts, as considered in this study, have been defined as follows: "In a project for elementary pupils, industrial arts is a study of the changes made by man in the form of materials to increase their values, and of the problems of life involved in these changes."[1]

The industrial arts may be studied at first with a general educational purpose in mind or in order to develop skill in a particular industry. The industrial-educational training of course has not been neglected in relation to the elementary school.

It is also necessary to make a distinction between industrial arts and the fine arts, although the two are very closely allied. Fine arts may be said to be concerned solely

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1. Frances S. Bonner and Lois Coffey Mossman. Industrial Arts for Elementary Schools. p. 5.

with the creation of beauty without regard to the utility of the object created, while industrial arts are primarily concerned with the creation of useful objects. However, there is apparently a fundamental and universal desire for beauty of design and decoration to be applied even to the most useful of objects, which means that at least some aspects of the fine arts are an integral part of the industrial arts.

Again, the industrial arts must be distinguished from occupations concerned with the production of raw materials from which useful objects are made. These occupations would include hunting and fishing, agriculture, mining, transportation and trade.

The Need for the Study

Correlating industrial arts with the regular course of study should aid the child in several ways. For example, experience in using the materials of production will give him rudimentary knowledge which may provide him with a good basis for later study of more detailed aspects of the arts--a study which may lead to the choice of a permanent occupation. It may at least encourage the pursuit of hobbies which will turn his mind toward helpful, useful channels, and from which he may acquire the happiness and stability which would combine to help him become a good citizen. John Dewey states, "The individual

with the question of beauty without regard to the utility of the object created, while industrial arts are primarily concerned with the creation of useful objects. However, there is opportunity a fundamental and universal basis for beauty of design and decoration to be applied even to the most useful of objects, which means that at least some aspects of the fine arts are an integral part of the industrial arts.

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The Need for the Study

Developing industrial arts with the regular course of study should aid the child in several ways. For example, experience in using the materials of production will give him rudimentary knowledge which may provide him with a good basis for later study of more detailed aspects of the science study which may lead to the choice of a vocational occupation. In any or least encourage the pupil or teacher which will cause the also lessen fatigue, avoid disorder, and free which be may acquire the ingenuity and stability which would enable to help him become a good citizen. Also have reason, "The industrial

finds happiness in doing what the natural and social environment demands."[2] From a purely physical standpoint, practical projects should improve his muscular coordination and potential skill.

Study of the industrial arts should help him acquire knowledge through experience, and at a pace with his own evolution, of how the various industries developed from very simple origins and how they are now interwoven into the complicated fabric of society. In learning the methods employed by people of the past in solving their problems of converting raw materials into shelter, clothing, and food, and the way their solutions have been developed and improved upon up to the present day; the pupil is not only adding to his store of knowledge but also is learning many practical applications of this knowledge. This study should aid him in understanding his own relationship to modern culture, and should give him a rudimentary insight into what will be his personal problems of choosing, utilizing, and preserving his possessions.

Johann Amos Comenius, 17th Century educational writer, and so-called "father of modern education"[3], first concluded that the constructive and destructive impulses in children

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2. John Dewey, Human Nature and Conduct. p. 297.
3. William H. Johnson and Isadore M. Fenn, Fundamentals of Industrial Arts and Vocational Education. p. 1.

tions impossible in doing what his natural and social environment demands.[5] Even a merely physical knowledge, practical wisdom should improve his material environment and physical skill.

Study of the individual man should help him acquire knowledge through experience, and of a peer with his own nature, of how the various institutions developed from very simple origins and how they are now interwoven into the complicated fabric of society. In learning the methods employed by people of the past in solving their problems of procuring new materials for shelter, clothing, and food, and the way tools or minerals have been developed and improved upon by, to the present day, the pupil is not only adding to his store of knowledge but also is learning many practical applications of this knowledge. This study should aid him in understanding his own relationship to nature outside, and should give him a preliminary insight into what will be his personal problems of choosing, utilizing, and preserving his possessions.

Jones and Dunham, the Country Educational Writer, and so-called "father of modern education"[6], that was studied that the conservation and instruction involves in children

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5. John Dewey, Human Nature and Conduct, p. 277.
6. William H. Johnson and Charles W. Ryan, Foundations of Industrial Life and Vocational Education, p. 1.

are identical and require guidance during the period of ordered accumulation of knowledge. Since that time, educators in different countries have been developing industrial arts training, either as a preliminary to later vocational training, or as a means of providing leisure-time occupations and of restoring nearly lost handcraft arts.

From the research conducted, it would seem that in this country efforts have been concentrated largely on the teaching of industrial arts beginning with the seventh grade. It would seem that some preparation would be desirable, commensurate with the age and development of the child, before more advanced studies in manual training and home economics are attempted. Too, there still exists the problem of those whose education ends with the elementary grades. They will have had little or no practical experience with handcrafts which may be the basis of their future existence unless they have had some sort of industrial arts training in the elementary school.

In summation, there does seem to exist a very definite need for making a concrete approach to teaching a child in his early, formative years, in order to gratify his constructive urge, and to prepare him for future development of higher skills.

and technical and research problems during the period of renewed accumulation of knowledge. Since then, educators in practical concerns have been developing instructional aids including either as a preliminary to under-graduate training, or as a means of providing intermediate overpaths and of measuring early last laboratory work.

From the research conducted, it would seem that in this country efforts have been concentrated largely on the teaching of laboratory work together with the research aspects. It would seem that some preparation would be desirable, commensurate with the age and development of the child, before more advanced studies in general teaching and home conditions are attempted. Yet, there still exists the question of those teachers who with the elementary grades. They will have had little or no practical experience with laboratory work and the big basis of their formal activities before they know but even part of laboratory work training in the elementary school.

In conclusion, there also seems to exist a very definite need for making a concerted effort to encourage a middle ground for effective teaching in order to justify the conservative view, and to prepare the for future development of higher skills.

Procedure in Collecting Data

Data used in this thesis were compiled from all available books written on the subject by recognized authorities, from government educational bulletins, periodicals, and material obtained by writing to outstanding schools which do include industrial arts in the present curriculum, either in training teachers or in actual practice in elementary schools. Among information from them are practical lesson plans which have actually been used, and the results obtained from such use.

Sources of this information included (1) Southern College Library, (2) The Tampa City Library, etc., and (3) records of the proceedings of the Tampa School Board of Public Schools.

The second step in securing data was to contact and interview industrial arts supervisors, teachers, and others. Pupils, teachers, and educators gave valuable information.

Method of Treating the Data

The data gathered from books and magazines were set down in notes, and as the structure of the thesis progressed, the material was organized in outline form and due reference made to its source. In some cases, such as reporting historical data, many authors were studied and specific use made of the most complete or representative references.

Procedure in collecting data

Data used in this thesis were compiled from all available source material on the subject of conventional automobiles, from government statistical bulletins, periodicals, and manuals dealing with selling in electronically automatic models in industry journals such as the trades conventions, either in reading texts or in actual practice in elementary schools. Many interviews from them are practical lesson plans that have actually been used, and the results obtained from such lessons.

Because of this informative material (1) teaching history, (2) the lesson step theory, also, and (3) methods of the presentation of the lesson taught by public schools.

The general map for carrying data was to analyze and interpret material from newspapers, magazines, and journals, trade bulletins, and educators gave valuable information.

Method of treating the data

The data gathered from books and magazines were put down in terms, and in the summary of the study presented, the material was adapted to million from and the reference made to the source. In some cases, just as presenting statistical data, many instances were omitted and paraphrase was made of the most simple phrase or representative statements.

The information gained through personal interviews was taken down carefully at the time of the interview. Since this material represented a large portion of the information obtained about local development of the industrial arts, it was used to give a picture of the facts concerning the growth of industrial arts in Tampa.

SUMMARY

It has been attempted to approach the problem of including industrial arts in the elementary school curriculum in such manner that the final results will be helpful to the teaching profession.

Since the seventeenth century recognition of the importance of teaching industrial arts in the public schools has been developing in various countries. It has been established that the child learns more readily and with greater pleasure through a concrete approach to a problem; and that through industrial arts, his creative capacities may be led into useful channels.

Study of the problem is limited to grades one through six.

Data were gathered from all types of available publications and from personal interviews; and were organized and compiled with due reference to source.

The information gained through personal interviews was taken down carefully in the form of the questionnaire, these data successfully represented a large portion of the information obtained about local development of the industrial area; it was used to give a picture of the trends concerning the growth of **industrial arts in Japan.**

It has been attempted to discuss the problem of training industrial arts in the elementary school curriculum in such manner that the final results will be helpful to the teaching profession.

Since the economic necessity manifesting of the importance of teaching industrial arts in the public schools has been developing in various methods. It has been established that the skill learned were readily and with greater pleasure through a concrete approach to a problem and that through the functional arts, his creative imagination may be led into useful channels.

Study of the problem is limited to grades one through six.

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CHAPTER II

HISTORY OF INDUSTRIAL ARTS EDUCATION

Understanding Tampa's Problem

To establish a basis for understanding the problem of the industrial arts program in Tampa, and to determine the purpose of including such a program in the elementary school, it seems necessary to review the general historical development of the teaching of industrial arts. The tie between the past and the present is so close that many of the problems of the past still exist. Hence, there follows a summary of the history of industrial arts education.

History of Industrial Arts Education

> Industrial arts and vocational education have existed in one form or other for many thousands of years....
>
> The young of primitive humanity gained their life-sustaining skills and knowledge from imitation of their elders. From time immemorial there has always been industrial education of some kind somewhere, whether in the home, in the shop, in the agricultural field, in the guild hall, in the monastery, or upon the field of battle. In later centuries when man became more civilized the younger members of the tribe were taught the

CHAPTER II

[illegible] of Industrial Arts Instruction

Introducing Theory to Practice

In conclusion a brief for introducing the writing of the industrial arts program in Texas, and to determine the purpose of instruction such a program in the elementary school, it seems necessary to review the general historical development of the teaching of industrial arts. The six volumes the pack are now presented in an effort that many of the problems of the past will exist. Second, they follow a summary of the history of industrial arts education.

History of Industrial Arts Instruction

> Industrial arts and vocational education have evolved in one form or other for many thousands of years....
>
> The power of producing necessary goods lately into-contributing utility and knowledge from immediate of their objects. From that immemorial time has always been industrial education of some kind somewhere, whether in the home, in the shop, in the agricultural field, in the grist mill, in the manufactory, or upon the field of battle. In later centuries when man became more civilized the larger numbers of his kind were taught the

life-sustaining skills through tribal rights [sic] and ceremonies. As civilization developed, certain members of the community began to render specialized services like carpenter work, weaving, cobbling, and baking. At first, boys learned the trades from their fathers or other members of the family. Later, young people agreed to work for several years for certain individuals provided they would teach them a trade. This type of indentured apprenticeship system was used in Egypt before the Christian era. It permitted the youth a wider choice of vocations than the father-and-son apprenticeship system. During the Middle Ages the indentured apprenticeship system played a very important part in the craft guilds. With the rise of the factory system, however, came the decline of the indentured apprentice and the craft guild and the gradual rise of our modern industrial era.

Whenever there has been work to do, problems to solve, difficulties to overcome, frontiers to subdue, there has been industrial education. It was the original project method. It has been real education, involving seeing, hearing, doing, thinking. It was only when the frontiers had been subdued and living became easier that the popular conception of the ideal education became the education of ideas and recorded experiences.

The problems of industrial arts and vocational education in the United States today are the same problems in a more complex setting than our ancestors have had to meet throughout the ages. We are confronted today with a highly organized society in which many of the products and services essential to everyday living are provided by skilled workers.

The industrial society of today is not only

[illegible] and commerce. As civilization developed, certain members of the community began to render specialized services like carpentry, weaving, cooking, and laundering. At first, they served the tribe first and their members of whom members of the family. Later, some people agreed to work for several years for certain individuals and what they would teach them a trade. This type of indentured apprenticeship system was used in Egypt before the Christian era. It provided the youth a value which in turn allowed the patriarchs apprenticeship system. During the Middle Ages the indentured apprenticeship system played a very important part in the craft guilds. With the rise of the factory system, however, came the decline of the indentured apprenticeship and the craft guild and the gradual rise of our modern industrial era.

Whatever there has been work to do, practically no matter, individuals or communities, problems to solve, there has been intellectual curiosity. It has been the intellectual pre-[illegible] motive. It has been that which [illegible] learning, learning, learning. It was only when the Freedmen had been educated and liberty became manifest that the popular conception of the idea of education became the education of them and provided opportunity.

The problems of industrial arts and vocational education in the United States today are the same problems in a more complex setting than our ancestors have had to work through the years. We are confronted today with a highly organized society in which many of the problems and problems essential to everyday living are provided by skilled workers.

The industrial society of today is not only

complex, but it is constantly changing due to technological developments. If we are to enjoy the comforts and cultural activities of modern life, we must be trained to render some form of efficient service, so that our modern industrial society can provide us with a monetary return sufficient to satisfy our economic and social needs.[1]

Pioneer Advocates of Teaching Industrial Arts

Three men have been primarily responsible for the trend toward teaching the handcrafts as an integral part of formal education. One of these men, Johann Amos Comenius (1590-1670)[2], was the original advocate of the use of handwork in formal education, beginning with the kindergarten. The Pansophic School at Saros Potak in Hungary first heard his ideas on the encouragement of the constructive and destructive impulses which he considered one and the same. He believed that knowledge should be acquired in a logical ordered fashion, and that children's mastery of the basic principles of what goes on in the world about them was essential in order to foster the development of any particular inclinations toward the manual occupations.

The second man, a Swiss teacher named Heinrich

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1. William H. Johnson and Isadore M. Penn, Fundamentals of Industrial Arts and Vocational Education. pp. 13-14.
2. Ibid., p. 1.

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Pestalozzi (1746-1827) who became known as the "Father of Manual Training"[3], emphasized the importance of instruction through the object method, in accordance with his belief that experiences and impressions were essential to the mental development of the child. He advocated acquiring ideas through sense perception thus binding together knowledge and the ability to perform, and believed the aim of education to be the natural, progressive and systematic development of all the natural powers.

The third man, Froebel (1782-1852)[4], thought construction activities should be emphasized in the school, which he considered should be organized as a miniature of society. He advocated the play idea and handwork activities in early education.

Other pioneers in advocating or putting into practice the teaching of industrial arts include Martin Luther, the Swiss reformer Zwingli, August Hermann Francke of Halle, Arnold Wageman of Gottingen, Switzerland's statesman Schwindler, Victor Della Vos of Moscow, and William Morris of England.

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3. Loc. cit.
4. Ibid., p. 2.

Particular (1926-1927) was known down as the "Center of Manual Training"[64], emphasized the importance of instruction through the object method, in accordance with the belief that experiences and impressions were essential to the mental development of the child. In elementary manual training some particular area including woodwork, metal work and the ability to perform, and included the aim of education to be the natural, progressive and systematic development of all the manual powers.

The ninth map, trend (1926-1927)[65], through our education activities should be emphasized in the school, which is practiced should be organized as a institution of society. To advance the play idea and improve activities in early education.

Other phases in curriculum or putting into practice the teaching of industrial arts include Marion Latter, the Swiss reformer Pestalozzi, Joseph Jacotot (pupils of Bell, world teacher of Jacotot), Gottfried Semper, Sebastian, Tolstoy Leo of Russia, and William Morris of England.

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64. Ibid. 112.
65. Ibid. p. 6.

Progress in Finland and Sweden

Both Finland and Sweden recognized the importance of manual training instruction in the schools before it was introduced into the United States. In Finland, Froebel's ideas were put into action by Uno Cygnaeus, who was appointed in 1858 by the Russian Emperor to reorganize the primary schools. Cygnaeus recommended the teaching of manual training with adherence to the universal aim of education.

In Sweden Otto Salomon began training teachers in his Sloyd Institute at Naas in 1872, under what is called the Swedish Sloyd System. The word "Sloyd" is derived from the Swedish "slojd" and is translated by the English word "avocation".[5] Sweden made manual training a part of her educational system in 1873 by establishing special schools solely to teach Sloyd to grammar school age pupils. Classes were limited to twenty pupils in order to allow for individual differences and individualized instruction. A definite attempt was made to retain the interest of the students; and projects were gradated in terms of difficulty.

Progress was being made in Switzerland and France, and also in England where William Morris and John Ruskin had

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5. Ibid., p. 5.

Progress in Training and Teaching

Both Dialand and Gordon recognized the importance of manual training instruction in the schools taking it was necessary into the latter years. In Phoenix, Pratt's ideas were put into action by Mrs Cooper, who was appointed in 1888 by the Gordon Museum to reorganize the primary schools. Cooper recommended the teaching of manual training with science to the natural sis of education.

In Boston Otto Salomon began teaching handwork in his Sloyd Institute in 1885, under what is called the Swedish Sloyd System. The word "Sloyd" is derived from the Swedish "slojd" and is translated by the English word "handiness".[6] Gordon made almost teaching a part of her educational system in 1893 by establishing special schools solely to teach Sloyd to grammar school age pupils. Gordon maintained that manly people is value to alike for individual efficiency and intelligent instruction. A definite attempt was made in relation the training of the monitors and teachers were provided in lessons of efficiency.

Progress was being made in mathematics and Pressey, and also in English where drilling exercise and drill books had

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6. Ibid., p. 8.

originated the "Arts and Crafts Movement".

The Manual Labor Movement in the U. S. A.

The manual labor movement in the U. S. A. resulted from the realization of the fact that the early schools were inadequate in that they failed to foster the students' general development.[6]

Exhibits stemming from the work of Victor Della Vos and William Morris appearing at the Philadelphia Centennial Exposition in 1876 first had a tremendous influence on the teaching of practical arts in the public schools of the United States.

Della Vos' methods of instruction for large classes stimulated in America the idea of analyzing the mechanical trades into basic tool processes and elements of construction.

The Sloyd System was brought to America in 1880. In 1886 Gustaf Larson came from Sweden to introduce Swedish Sloyd in the Boston schools.

In 1870 industrial drawing was introduced by law into the Massachusetts public schools. Following the Philadelphia Centennial, the St. Louis Manual Training School was established.

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6. John F. Freise, Exploring the Manual Arts. p. 5.

originated the "Arts and Crafts Movement".

The Second Labor Movement in the U. S. in 1886

The second labor movement in the U. S. in 1886 resulted from the realization of the fact that the early reforms were inadequate in that they failed to factor the "Industrial" problem into development.[6]

Industry stemming from the work of Frank Sells and William Morris appearing at the Philadelphia Centennial exposition in 1876 had a tremendous influence on the industry of production arts in the public schools of the United States.

Sells had "models of instruction for large classes adjusted to develop the idea of applying the mechanical forces into hand tool processes and elements of manufacture."

The Sloyd System was brought to America in 1886. In this United States some five years to introduce Manual Sloyd in the Boston schools.

In 1890 Industrial Training was introduced by Jane Addams into the Hull-House public schools. Following the Philadelphia exposition, the St. Louis Manual Training School was established.

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6. John F. Feller, Industrial Arts Manual Data. p. 8.

Schools also sprang up in Chicago, Toledo, and Baltimore.[7] During this period American ideas of education were developing in the direction of providing student participation in the work of the world.

Dr. Runkle of the Massachusetts Institute of Technology, Boston, and Dr. Calvin M. Woodward of Washington University, St. Louis, were chiefly responsible for the early development of manual training in this country. The latter educator recommended a system of manual training to begin in the kindergarten and to continue through the high school.

James E. Russell, Charles R. Richards, and Frederick G. Bonser were most influential in recommending the enriched study of handwork in the elementary grades. This handwork they termed "industrial arts".

Other important developments were the founding of Teachers College of Columbia University, to train industrial teachers; and the organization of various trade schools and industrial education societies.

Industrial arts have passed through four stages in the United States, namely, (1) The Russian or Abstract Stage,

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7. Ibid., p. 13.

Nebraska also already on its strength, Volume, and activities.[7] During this period Americans class of education are participating in the direction of practically student participation in the work of the world.

Dr. Smith of the Massachusetts Institute of Technology, Boston, and Dr. Clyde E. Dominey of Antioch University, Ohio, being very ably responsible for the early development of manual training in this country. The latter actually recommended a system of manual training to begin in the kindergarten and to continue through the high school.

Dewey in Detroit, Charles R. Richards and Frederick G. Bonser were most influential in recognizing the minimum work of students in the elementary grades. This movement they named "industrial arts".

Other important developments were the founding of Teachers College of Columbia University, the Pratt Industrial Academy, and the organization of various trade unions and industrial education societies.

Industries were then passed through four stages in the United States, namely (1) The Revolution or Interest Stage,

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7. Idem, p. 14.

(2) The Swedish Sloyd Stage, (3) The Arts and Crafts Stage, and finally, (4) The Industrial Stage.[8] The Industrial Stage, which began after the turn of the twentieth century, still shows its influence in the Junior high school organizations in the following four common types of shop: (1) The Ettinger Plan, (2) The Gany Plan, (3) The Russell Bause Plan, and (4) The Pittsburgh Plan.[9]

History of Industrial Arts Teaching in Tampa

Authors have told of periods in which the industrial arts development was retarded and somewhat discredited.[10] By some, the reaction was said to be due to extravagent claims made for the work which were not realized--that too much emphasis was placed on trade training and not enough on the general side of the program.[11] Permanent growth is slow and it seems there is always a reaction to a "boom" stage.

By 1900 many of the northern states had an organized industrial arts program that included handwork in every grade. Most of the schools had woodworking for boys and sewing

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8. S. J. Vaughn and A. F. Mays, Content and Method in Industrial Arts. pp. 32-38.
9. David Snedden, et al, Reconstruction of Industrial Arts Courses. pp. 4-5.
10. Friese, op. cit., p. 16.
11. C. A. Bennet, History of Industrial Arts. pp. 360-361.

(1) The Swedish Steel Shops, (2) The Lathe and Jobber Shops, and Stamping, (4) The Instrument Shops.[8] The Industrial Shops, which began after the turn of the twentieth century, still show the influence in the Senior High School organization by the following four common types of shops: (1) The Drafting Room, (2) The Body Plan, (3) The Overall Sewn Plan, and (4) The Blacksmith Plan.[9]

Failure of Industrial Arts Training in Schools

Authors have held of problems in which the industrial arts curriculum was provided and somewhat diversified.[10] By some, the conclusion was held to be due to subsequent choice made for the work which were not realistic-which some pupils are placed in trade training and not enough on the general side of the program.[11] Movement growth is slow and it seems there is always a reaction to a "boom" change.

By 1920 many of the industrial shops had an industrial laboratory were programs that included handwork in many grades. Most of the schools had machinery for boys and sewing

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8. T. A. Temple and A. T. Shaw, Governing and Policing in Public Schools, pp. 61-63.
9. David Snedden, et al., Organization of Industrial Arts Courses, pp. 5-7.
10. Fitzpatrick, op. cit., p. 13.
11. E. A. Lawson, History of Industrial Arts, pp. 100-101.

and weaving for the girls.

In 1907 Tampa's first shop program was organized at the Robert E. Lee School, in the form of arts and crafts. Only the seventh and eighth grade boys were permitted to participate in the work then. Later, the high school boys from other city schools began taking shop work at Robert E. Lee.

Owing to the success of the industrial arts program in this school, when the Hillsborough County High School was erected in 1911, it was equipped with a well-organized shop where the work was carried on in an up-to-date fashion. Since that time, every high school erected in the county has offered some sort of industrial arts program, which, like the other subjects in the curriculum, was established and supported by the county.

However, industrial arts in the grades has been entirely neglected. There is only one elementary school in the county with this much-needed subject offered in the curriculum.[12]

Industrial arts teaching has been the means of holding in the high schools many of Tampa's boys who otherwise would have dropped out, through stimulating their interest in the

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12. Information obtained from County School Board Records, and from Dr. E. L. Robert, active principal and superintendent of Hillsborough.

and working for the girls.

In 1917 Simon's Night Home program was organized at the Seward L. Lane School, in the Jane of Arc area of Quincy. Only the seventh and eighth grade boys were assisted in participation in the work team. Later, the high school boys from community schools began taking night work at Seward L. Lane.

Being in the enclave of the industrial area program in this school, when the Hillsborough County High School was created in 1921, it was enriched with a well-equipped shop where the work was carried on as an up-to-date basis. Since that time, every high school student in the county has attended some part of industrial arts program, which, like the other subjects in the curriculum, was substituted and supported by the county.

However, industrial arts in the grades has been entirely neglected. There is only one elementary school in the county with this modernized subject offered in the curriculum.[12]

Industrial arts teaching has been the means of helping in the high schools many of Tampa's boys who otherwise would have dropped out. Through stimulating their interests in the

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12. Information obtained from County School Board Records, but from Mr. H. J. Bennett, active industrial and vocational teacher of Hillsborough.

work. Since this subject has proved to be of so much value in the high schools, there is a widespread feeling that the inclusion of industrial arts in the elementary curriculum would make a worthwhile contribution toward the satisfactory progress of our children.

SUMMARY

As far back as the seventeenth century, the importance of incorporating manual training into the formal educative curriculum was recognized. In the general growth of the industrial arts movement, there were four stages, the Russian or Abstract, the Swedish Sloyd, the Arts and Crafts, and the Industrial.

A study of the general growth of industrial arts is important to achieve understanding of the present situation in Tampa, which still poses some of the problems of the past.

Manual arts in the U. S. A. grew out of the realization that education of the time failed to bring about the all-round development of the pupil.

The development of machine production resulted in the disappearance of the traditional type of apprenticeship, which in turn had supplanted the earlier father-to-son training, when certain vocations came to require more skill. The modern factory system was unable to train its workers as the masters

work. Since this method has proved to be of so much value in the high schools, there is a pronounced feeling that the introduction of industrial arts in the elementary curriculum would help a worthwhile reorganization toward the satisfactory progress of our children.

SUMMARY

As far back as the seventeenth century, the importance of interpretating manual training into the formal education curriculum was recognized. In the general growth of the industrial arts movement, there were four stages, the teaching of industry, the Swedish sloyd, the arts and crafts, and the industrial.

A study of the general growth of industrial arts is important to achieve understanding of the present situation in Texas, which still feels the effects of the problems of the past.

Manual arts in the U. S. A. grew out of the realization that education of the time failed to satisfy adequate the proper development of the pupil.

The development of modern production resulted in the disappearance of the traditional type of apprenticeship, which in turn had supplanted the earlier father-to-son training. When machine production came it replaced work skill. The manual factory system was unable to train its workmen as the machines

had done in the handcraft period.

The shifting to the public school of the responsibility of trade education was the most pronounced effect of the industrial education movement during the first decade of the nineteenth century.

Manual training has continued to grow in popularity in the public schools because it is basic to all trades, yet is not specific trade training.

The development of industrial arts in Tampa is viewed as a rising and falling of interest in the subject, or a contest between conservatives and progressives. When woodworking was first introduced into Tampa high schools, the shop courses began with whittling, advancing toward bench woodworking in the higher grades. Sewing for the girls was begun. Much improvement is apparent in the present program, since most of the high schools have well-equipped shops with modern fixtures and many types of work.

However, there is only one elementary school in the county which offers any type of handcraft. The success of the industrial arts in the high schools has led to the widespread belief that inclusion of such a program in the elementary school would make a worthwhile contribution toward the satisfactory progress of the pupils.

had done in the kindergarten period.

The activities in the public school of the reformed industry of trade introduction the more progressive ideas of the industrial education movements during the first decade of the nineteenth century.

Social training has continued to grow in popularity in the public schools because it is basic to all trades, yet is not specific home training.

The development of industrial arts in Iowa is viewed in a closing and falling of interest in the subject, as a social intense exploration and experiences. Then manual training was first introduced into these high schools, the shop courses began with carpentry, showing tested home construction in the higher grades. Drawing for the girls was begun. Most improvement is required in the present programs. Since many of the high schools have well-equipped shops with modern fixtures and many types of work.

However, there is only one elementary school in the county which offers any type of training. The success of the industrial work in the high schools has led to the widespread belief that introduction of such a program in the elementary school would make a worthwhile contribution toward the entire industry program of the pupils.

CHAPTER III

OBJECTIVES

Important Aims

Through studying the aims of industrial arts for the elementary grades, as advocated by leading authors and teachers, the following list of objectives, in order of relative importance, has been compiled by this author:

1. Learning to be useful around the home.
2. Learning to plan and organize a job.
3. Learning habits of neatness and order.
4. Learning a hobby.
5. Learning to recognize and appreciate good workmanship.
6. Making a project to take home.
7. Exploring various fields of an industrial nature.
8. Learning the beauty and value of nature.

The importance of trade training as an aim for industrial arts for elementary school pupils has been minimized by

CHAPTER III

[illegible]

[illegible]

Through studying the aims of industrial arts for the elementary grades, as stressed by leading authors and teachers, the following list of objectives, in order of relative importance, has been compiled by this author:

1. Learning to be useful around the home.
2. Learning to plan and organize a job.
3. Learning habits of neatness and order.
4. Learning a trade.
5. Learning to recognize and appreciate good workmanship.
6. Making a project on their home.
7. Exploring various fields of an industrial nature.
8. Learning the beauty and value of nature.

The importance of hands working as an aim for industrial arts for elementary school pupils has been mentioned by

all the authors studied. However, while the grade school industrial arts program cannot fulfill the need for trade training, it can provide a basis for further training along this line.

1. Learning to be useful around the home: The home, of course, is the basic unit in society and the immediate environment to which the pupil belongs and will always belong in some relationship or other. Upon this fundamental relationship for the most part depends the happiness of the individual. His happiness, in turn, depends upon his own usefulness and importance in his environment. The only way real happiness can be achieved in the home is through mutual cooperation and interest, with each member of the family contributing his share and receiving due recognition therefor.

In addition to encouraging cooperativeness, industrial arts in the grade schools could teach the pupils how to perform many tasks of real value around the home, thus contributing to the family welfare and to the individual's sense of usefulness and importance.

2. Learning to plan and organize a job: Most authorities agree that the creative impulse of the child should not be under-estimated. While this creative urge

all the authors studied. However, while the group school to-
scholarly arts program cannot fulfill the need for trade train-
ing, it can provide a basis for further training along this
line.

5. Learning to be useful beyond the home. The
home, of course, is the basic unit in society and the benefit-
ons environment in which the young children and will always be
long in some relationship or other. Upon this fundamental
relationship for the most part depends the happiness of the
individual. His happiness, in turn, depends upon his own sa-
fisfaces and importance in his environment. The only way that
happiness can be achieved in the home is through mutual coop-
eration and interest, with each member of the family contrib-
uting his share and receiving the recognition therefor.

In addition to encouraging environmentness, individ-
ual area in the group schools could teach the pupils how to
perform many tasks of real value around the home, that con-
tributing to the family welfare and to the individual's sense
of confidence and importance.

6. Learning to plan and organize a job. Most
authorities agree that the economic implies of the child
should not be underemphasized. While this provides ope-

should be allowed as much free play as possible to prevent its being subordinated to pattern-following, it is desirable to guide it so that the pupil will realize the importance of planning consecutively each step to be followed before he begins actual work on his project. He should also learn the importance of organizing his work, both in individual jobs and in group projects. In group projects, cooperative organization should be stressed, in order that the pupil will understand the necessity for relating his own actions to the actions of the rest of the group.

3. Learning habits of neatness and order: Habits established in youth will survive through adulthood. If the principles of orderly and neat performance are inculcated in the elementary school pupil, they will be of inestimable value to him when the time comes for him to take his place in industry, as well as in his own personal life. It is essential for the sake of efficiency to learn to avoid waste of time and materials. Responsibility for seeing that the pupil plans his job in advance in order to be sure that all the materials are on hand and the tools available; and for providing suggestions for projects so that no time need be wasted between assignments, falls of course upon the teacher. Good working positions to avoid unnecessary fatigue,

should be aligned as much from duty as possible to prevent
its being subordinated to pecuniary difficulty in the deter-
mile to guide it or that the pupil will realize the impor-
tance of planning systematically and step by by planned
before he begins actual work on the project. He should
also learn the importance of regulating his work, both in
individual jobs and in group projects. In group projects,
cooperative organization should be stressed, in order that
the pupil will understand the necessity for subsating his
own actions to the actions of the rest of the group.

3. Increased ability of workers and worker:

Skills acquired by pupils will serve through experience.
If the principles of worker and work relationships are instil-
ledd in the elementary school pupils, they will be of practi-
cable value to him when the time comes for him to take his
place in industry, as well as in his own personal life. It
is essential for the sake of efficiency in James to avoid
waste of time and material. Responsibility for seeing that
the pupil gives his job in order is owner to be sure that
all the schedule are in and the tools installed and
for providing suggestions for projects or lack so that he
be marked between assignments, falls of course upon the
teacher. Good working positions be avoid unnecessary fatigue.

and work tables and surroundings as free as possible from clutter, should be encouraged.

4. Learning a hobby: Healthful hobbies have been found to be one of the major assets in achieving personal happiness. By giving the pupil experience with organized projects in the many fields of industrial arts, the schools will be putting him into contact with several or many things which may be the source of a lifetime of interesting and perhaps profitable activities. He will learn from what type of activity he will be able to derive the most pleasure; and will be instructed in the fundamentals which he must learn before becoming a master of the hobby or hobbies which please him most.

5. Learning to recognize and appreciate good workmanship: There are many reasons for emphasizing this point. As a consumer of goods as well as a producer, the student will need to know what constitutes good workmanship. This is essential from the standpoint of his learning to choose articles which will be durable and attractive, and will best serve the purposes for which he will need them. In addition, such studies as the preparation of food, problems of heating, lighting, ventilation and the disposal of waste, etc., will have a direct effect on his health and his safety, as well as on his economic

and much tackle and entanglement as free as possible from kinks, they should be examined.

4. Learning a Bridge. Unofficial bridge has been found to be one of the major assets in maintaining personnel morale. By giving the small experiment with significant problems in the many fields of industrial arts, the student will be provided the time needed with several or many things which may be the source of a lifetime of interesting and perhaps profitable activities. He will learn from what sort of machinery he will be able to derive the most pleasure and will be interested in the fundamentals which he must learn before becoming a master of the hobby or hobbies which please the most.

5. Learning to Formulate and Conservative Good Judgment. There are many reasons for mentioning this point. As a measure of good or ill as a machinery, the student will need to know what constitutes good workmanship. This is obtained from the experience of his learning to choose materials which will be durable and economical, and will best serve the purpose for which he will need them. In addition, such studies as the preparation of food, problems of health, clothing, construction and the theory of music, etc., will have a direct effect on the health and his safety, as well as to his economic

condition. As a producer, he should be able to judge whether his product will meet satisfactorily the uses to which it will be put. From the standpoint of good workmanship, there is much satisfaction to be obtained either from turning out an attractive and valuable job; or in furnishing one's environment as attractively and efficiently as possible.

6. Making a project to take home: One of the purposes of the study of industrial arts is to help the student achieve a real interest in his immediate surroundings. In this respect it is desirable to encourage him to think of and to produce objects which would be useful to have in his own home, both to him and to the other members of the family.

7. Exploring various fields of an industrial nature: The pupil should be brought into contact with the conditions under which products are made and distributed so that he may acquire a fundamental knowledge of the functions and methods of industry. It is important for him to know the problems, relationships, and interdependencies of the people and society.

8. Learning the beauty and value of nature: While industrial arts is primarily concerned with the changing and utilizing of natural materials to increase their value to man, the pupil will learn to appreciate the raw materials nature

conditions. As a producer, he should be able to judge whether his product will meet satisfactorily the uses to which it will be put. From the consumption of good craftsmanship, there is much satisfaction to be obtained either from testing out an attractive and suitable job or in discussing such questions as attractiveness and suitability with other people.

6. Making a product to take home: One of the some phase of the study of industrial arts is to help the student realize a real interest in his immediate surroundings. In this manner it is desirable to encourage him to think of and to produce objects which would be useful to have in his own home, both in kind and in the other members of the family.

7. Industrial materials field of an industrial nature: The pupil should be brought into contact with the small industrial raw material products and made not disinterested so that he may acquire a fundamental knowledge of the production and marketing of industry. It is important for him to know the problems, relationships, and interdependence of the people and nations.

8. Learning the beauty and value of materials: While industrial arts is primarily concerned with the changing and modifying of natural materials to increase their value to man, the pupil will learn to appreciate the raw materials nature

supplies and how the beauty of these things may be brought out through industrial arts in such things as recognizing the worth and the beauty of fine woods, etc.

SUMMARY

In summation, the important objectives of the study of industrial arts in the elementary grades as compiled from statements of leading authors and teachers are for the pupil to learn to be useful around the home, to plan and organize jobs, to be neat and orderly in his work, perhaps to acquire a hobby, to recognize and appreciate good workmanship, to make a project to take home, to explore various fields of an industrial nature, and to learn to appreciate the beauty and value of nature.

In the elementary school, basis can be supplied for further intensive training for trade, although trade training itself cannot be given to this age pupil.

supplies and how the health of those living may be improved and through industrial arts in such things as manipulating the tools and the health of the people, etc.

Conclusion

In conclusion, the important objectives of the study of industrial arts in the elementary grades as mentioned from standpoint of leading educators and teachers are for the pupil, to learn to be useful around the home, to plan and organize jobs, to be neat and orderly in his work, courage to undertake a hobby, to recognize and appreciate good workmanship, to have a feeling to make home, to acquire personal knowledge of an intuitive total meaning, and to learn to appreciate the beauty and value of nature.

In the elementary school, there can be emphasis on further information relating the home, although much training itself cannot be given to this age pupil.

CHAPTER IV

SELECTION OF SUBJECT MATTER

Selection of General Subject Matter

The following selection of general subject matter has been made by this writer, each subject representing a unit of work to be taken up separately but to be worked together with the other subjects taught in each grade.

Recommended for grades four, five, and six are woodworking, household electricity, metal working, drawing, household mechanics, introductory carpentry, gardening, and projects in miscellaneous crafts.

Recommended for grades one through four specifically are projects in paper craft, pottery, and modelling. Projects in weaving are recommended for all six grades; sewing for girls; and shop specifically for boys, but optional for girls.

The remainder of this chapter will be devoted to a discussion of each of these subjects and the units to be included under them.

Woodworking

The following units are suggested under the general heading of woodworking:

1. Small items of furniture: These may include doll's house and furniture, play house and furniture for use in the school room, furniture for the school library such as simple tables and chairs, corner shelves, and projects to take home such as whatnots, etc.

2. Coping saw projects: Pupils could make bird houses and various types of toys.

3. Whittling and carving: Match and candle holders, ashtrays, paper weights and ornaments can be made by these methods.

4. Wood burning: This method can be applied to the construction of useful articles such as book ends, as well as for decorative objects.

5. Toy repairing and toy making: Projects in degrees of complexity varying with the ability and age of the pupil should be planned.

6. Wood decorating and painting: Articles made

Conclusion

The following units are suggested under the general heading of woodworking:

1. Small items of furniture: These may include doll's house and furniture; play house and furniture for the kitchen corner, furniture for the school library room or simple boxes for mailing, number lockers, and projects in this range such as painting, etc.

2. Making the workbench: Pupils would make this bench and various types of toys.

3. Patterns and machines: Jigsaw and scroll saw, electric, power scroll saw and screwdriver can be made by these methods.

4. Wood turning: This method can be applied to the construction of bowls, wooden balls and lamp bases, as well as for decorative objects.

5. The remaining and the making: Subject to degree of complexity involving with the ability and age of the pupil should be planned.

6. Wood lacquering and staining: Advance made

by the pupils can also be painted and decorated by them; or old furniture, toys, etc., can be refinished. This gives an excellent opportunity for inculcating in the pupil the principles of good taste.

Household Electricity

The study of household electricity lends itself particularly to:

1. The construction of bells and buzzers, and transformers.

2. Repairing electrical appliances: There is ample scope for repairing defective irons, toasters, cords, etc.

3. Electric soldering.

Metal Working

The elementary school shop need not purchase expensive tools for metal work, but it is possible to procure the equipment necessary for instruction in the fundamentals, and to construct properly some simple projects in:

1. Art metal.

2. Tin can craft.

by the people who are so jaded and interested by them as to be unmoved, they will be reflections. This gives us another important opportunity for presenting to the pupil the principles of good taste.

Successful Advertising

The study of successful advertising lends itself particularly to

1. The construction of text and layout, and typography.

2. Improving physical appearance. There is ample scope for remedying unhealthy living, bathers, morals, etc.

3. Charity publicity.

Moral Training

The elementary school may make out practicable experiments tools for moral work, but it is possible to promote the explicit consciousness for instruction in the fundamentals, and to construct practically some simple projects in:

1. Self moral.

2. The gang ethic.

Art metal and tin can craft are closely allied and of nearly equal rank in performance. Both are interesting and valuable to the course of study. From metal may be made jewelry, plates, trays, book ends, candlesticks, plaques, boxes, paper knives, and toys. Pupils will employ sawing, soldering, hammering, bending, tooling, etching, punch work, forming and appliqué work.

Units in Drawing

The following units in drawing could be worked into an industrial arts program very well:

1. Making simple drawings.

2. Elementary designs and decorations.

3. Blueprinting and making templates.

4. Freehand sketches.

5. Reading and working drawings.

6. Cartoons.

7. Posters.

Through these units the pupils should learn the fundamental rules of drawing and design.

Art museum and film can enrich our already rather meager of theatre which can be performance, such as interpretation and research on the nature of theatre. Film media may be used primarily process, story, but audio, realistic, dialogue, human, paper factors and boys. Pupils will employ sensing, activated imagination, feeling, feeling, creating, panel work, planning and evaluation work.

Skits in Theatre

The following skits in theatre would be worked into an individual skit program very well.

1. Outline simple dramatics.
2. Elementary design and construction.
3. Elementary and active investigation.
4. Personal situation.
5. Speaking and reading drama.
6. Dance.
7. Pageant.

Through these skits the pupils should learn the fundamental rules of theatre and design.

Household Mechanics

Under the heading of household mechanics, pupils could learn many things of value to them for use in the home:

1. Repairing household equipment: This might include mending broken furniture, puttying and repairing glass, fixing leaking faucets, and other fairly common repair jobs around the house.

2. Painting screens, fences, etc.

3. Hanging and removing screens.

Carpentry

An introduction to carpentry should be given in the elementary grades under the following headings:

1. Visiting a building under construction.

2. Learning about different types of building materials: Pupils should learn the types of materials and their uses in construction, such as foundations, walls, etc.

3. Learning how buildings are designed.

Units in Miscellaneous Crafts

It has been found advisable to include the follow-

Overall Direction

Under the heading of historical monuments, pupils could learn very things if some on time devoted to the issue.

1. Individual historical monuments. This might be made having various discussions, reading and speaking class, finding building dates, and other public common repair jobs around the house.

2. Possible projects, models, etc.

3. Excursions and travelling reports.

Geography

In introducing to secondary school be given in the elementary grades under the following headings:

1. Physical [illegible]

2. Learning about different areas of Canada as [illegible] business. Pupils should learn the types of geriatrics and their use in manufacturing, and of transportation, mills, etc.

3. Industries how industries are developed.

Units in Elementary Grades

It has been found advisable to include the following.

ing units under miscellaneous crafts.

1. Leathercraft: Articles which can be made of leather are bill-folds, coin purses, belts, handbags, blotter corners, book covers, book marks, whiskbroom holders, napkin holders, picture holders, comb and pencil cases, and dog harnesses and leashes.

2. Projects in alabaster.

3. Molded plastic: One of the principal uses made of this material is the construction of jewelry.

4. Paper craft: Units on paper working might include instructions in coloring and dyeing, measuring, folding and cutting, weaving paper strips into objects such as mats, hats, picture frames, baskets, etc. Paper tearing, cutting, and pasting are recommended for initial training. Greeting cards, holiday decorations, painted animal toys, and paper mosaic are suggested.

5. Bookbinding: Albums, scrapbooks, and class workbooks may be useful items to make under this unit.

6. Weaving: Objects which can be woven include baskets, mats, trays, picture frames, seating, toy furniture,

[illegible] [illegible] advertising [illegible].

1. Instruments: Articles which are in use of teacher are still-field, voice power, notes, handbags, [illegible] patterns, hand covers, [illegible] [illegible], [illegible] [illegible] [illegible], [illegible] [illegible], [illegible] [illegible] [illegible]

waste paper receptacles, potholders, and rugs.

7. Pottery and modelling: Powdered clay can be used for glazed pottery, vases, ashtrays, tea-tiles, plates, bowls, etc., without firing. Busts, and other decorative objects, may be modelled from clay.

8. Puppet-making: The hand-puppet is easier to make and to handle than the marionette type, but it is likely that the older children would prefer to work with the more intricate marionette which is operated by strings.

9. Other projects: These might include diorama, map-making, lantern slides, shadow plays, and soap carving.

Gardening

Gardening is a subject from which much can be learned in miniature projects. If it is not possible for the class to use a plot of ground at or near the school for a full-scale garden, the same principles will apply to a window-box or miniature garden. Units of importance under gardening are:

1. Selecting and preparing the ground for planting: Study should be made of the various types of soil.

2. Figuring cost of seed, fertilizer, and insecti-

[illegible] [illegible] [illegible] [illegible] and [illegible].

7. [illegible] and [illegible]: [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible]

sides: The class should learn how to select and use these items.

3. Planting the seeds and giving the plants proper care.

4. Harvesting and marketing vegetables and flowers: This could be made into a very practical project which would give the pupils first-hand experience.

5. Selection and care of tools: Pupils should know how to select the correct gardening tools for each phase of the work, and how to care for them properly.

Sewing

The rudiments of hand-sewing should become a part of every girl's early training. Units are:

1. Fundamental sewing stitches: Sewing bags, tea towels, aprons, and doll clothes are good projects for the beginner.

2. Mending and darning: Simple methods of mending and darning should be taught, as well as the importance of prompt repair to insure better wear.

<u>Other</u>: The other should learn how to relate and use these items.

2. <u>Letting the needs and wishes for clothing vary widely</u>.

4. <u>Determining and emphasizing creativeness and flexibility</u>: This would be only from a very practical standpoint which would plan the pupil's individual experiences.

5. <u>Situation and case of family</u>: Pupils should learn how to select the correct yardstick with for each phase of the work and how to care for them properly.

<u>Social</u>

The relationship of homemaking should become a part of every girl's daily business. Note cases:

1. <u>Consumer and/or citizens</u>: Making laws, the results, courses, and girl clothing are good problems for the department.

2. <u>Health and hygiene</u>: Health problems of working and dancing should be taught, as well as the importance of proper hygiene to insure better work.

3. Embroidery: Elementary embroidery stitches should be taught. They might be utilized in decorating the elementary sewing projects.

4. Simple crochet, drawn work, and knitting: Handwork of this type frequently proves extremely interesting to girls of all ages.

The true art of hand sewing is in danger of becoming a lost one unless the schools can provide stimulation on the part of young girls to engage in this activity at least as a recreation.

SUMMARY

General subjects and specific units under them have been selected for the elementary grades. It has been considered advisable by the writer to include the following nine subjects:

1. Woodworking.
2. Household electricity.
3. Metal working.
4. Drawing.
5. Household mechanics.
6. Carpentry.
7. Miscellaneous crafts.

5. Dressmaking: Dressmaking materials utilized should be taught. They might be utilized in teaching the elementary sewing projects.

6. Girls trades, home work, and training: Instruction of this type frequently proves extremely interesting to girls of all ages.

The time and of some months is the origin of having a test one which the schools can provide stimulation to the work of young girls in engage in this activity or less as a recreation.

Summary

Several subjects and specific tasks which have been included for the elementary grades. If the best results are obtained by the action in carrying the following aim subjects:

1. Housework.
2. Personal adjustment.
3. Metal working.
4. Sewing.
5. Domestic occupation.
6. Hygiene.
7. Miscellaneous crafts.

8. Gardening.

9. Sewing.

Specifically recommended for grades one through four were projects in paper craft, pottery, and modelling (all under Miscellaneous crafts); for grades four through six, the remainder of the subjects; and for all six grades, weaving. Shop is recommended for boys, but is optional for girls.

CHAPTER V

TEACHING METHODS

The following suggestions are based on the research, study, and personal experience of this writer.

Types of Teaching Methods

Industrial arts may be taught either in the classroom along with other units, or it may be taught separately in the shops.

In the Classroom

The classroom method is recommended for grades one through three. The majority of authorities concur in the opinion that correlation of handwork with other studies is advisable.

There is almost unlimited opportunity for such correlation through the use of sand tables, model grocery stores, play houses, and many other activities.

In Appendix A there is quoted an excellent example of how a class picnic for the 2A grade at Orr School, Chicago,

Chapter V

Suggestions

The following suggestions are based on the research study, and personal experience of this writer.

Uses of Teaching Methods

Instructional aids may be begun sooner in the elementary grades along with other units, so it may be taught supplementary in the upper.

In the Classroom

The classroom method is recommended for grades one through three. The majority of activities occur in the spelling and communication of handwork with other studies in abeyance.

There is almost unlimited opportunity for real motivation through the use of meal training, local grocery stores, play houses, and many other activities.

In Appendix A there is included an excellent example of how a whole school for the 24 grade as for instance, attempts

Illinois, was worked into such a program, with the results obtained therefrom.[1]

In the Shop

The shop method is recommended for the grades four through six.

Types of Shop: There has been much discussion of the comparative values of the two types of shop--the unit shop and the general shop. Before proceeding to evaluate them, it is desirable to clarify exactly what is meant by each term as used in this study.

The unit shop permits work of only one type to be done. For example, it would be a shop with facilities either for metalworking, or for woodworking, but not for both.

By general shop is meant a shop wherein several different types of work can be carried on, simultaneously or separately. The shop must, however, always be equipped for a variety of activities.

This study indicates that the general shop is the more practical, and that it is recommended by a larger number

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1. William H. Johnson, The Craft Techniques as an Integral Part of Teaching Method. Chicago Public Schools Bulletin. pp. 34-39.

illinois, was working into such a program, with the results obtained thereafter.[1]

In the Group

The group method is recommended for the reason that through the:

Types of Text: There has been such discussion of the comparative values of the two types of textbooks, both old and the contemporary ones. Values peculiarly to contain them. It is necessary to clearly specify what is meant by each term as used in this study.

The more than possible uses of only one type is in mind. For example, it would be a loss with facilities either for mechanicalling, or for workbooking, but not for both.

By personal study is meant a study through several different types of work you be material in, alternatively or separately. The group work, however, stress is replaced for a variety of activities.

This study indicates that the personal study is the more practical, and that it is recommended by a larger number

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1. William H. Johnson, The Study Technique as an Integral Part of Teaching Method, Chicago: Public Schools Bulletin, p. 1.

of educators. It is, in fact, the type of shop in common use.

Equipment should be such that each activity can be carried on as a consecutive unit. In the separate units there should be a variety of projects. All members of the class should not be required to work on the same problem at a given time. After all the class has been started on some simple introductory problem, individual projects should be chosen. Instead of having each pupil in the class make, for instance, a footstool or table, it is advisable to have each child make his own selection and do individual work.

Democratic principles should govern the conduct of the shop. It is important that the teacher employ merely guidance and suggestions, rather than dictation.

Type of Instruction

The following types of instruction have been considered, and are evaluated below:

1. Lectures: Results of this study indicate that few or no lectures should be given. Pupils will learn more readily from doing things themselves and from seeing them done than they will from hearing about them.

2. Individual instruction: It has been concluded that a little individual instruction should be given to each

of assumption. It is, in fact, the type of step in common use.

Judgment should be used that each activity can be carried on as a consecutive unit. If the concrete pile should be a variety of projects. All members of the class should not be required to work on the same problem at a given time. After all the class has been exposed on some simple introductory problem, individual projects should be chosen, instead of having each pupil in the class write, for instance, a textbook or report, it is advisable to have each child work his own selection and do individual work.

Democratic principles should govern the conduct of the step. It is important that the teacher employ merely guidance and suggestions, rather than direction.

Uses of Instruction

The following types of instruction have been considered, and are mentioned below:

1. Lectures - Details of this study indicate that few or no lectures should be given. Pupils will learn more readily from using library references and from making their own study and from hearing about them.

2. Individual Instruction - It has been concluded that a little individual instruction should be given to each

pupil as he starts his project, and that his work should be checked and commented upon at logical intervals designated at the time of planning his work.

3. Demonstration to the group: Demonstration to the class as a group is thought to be the best procedure. This should be done before individual projects are undertaken, with later occasional instruction to the group as a whole to maintain unity.

4. Combination: A reasonable, balanced combination of the above methods should be sought. Any lecturing necessary could well accompany the demonstration, and would become more effective through such means. Individual instruction should follow the demonstration to the whole class, with occasional later instructions to the group. It should be remembered that it is highly desirable to avoid trying to teach more than the child will be able to assimilate.

Notebooks and Written Work

It is not considered helpful to require the keeping of notebooks, although, of course, pupils may keep them if they so desire.

Written work probably is of no value in the shop

pupil an be shown via project, and that the work should be checked and commented upon at logical intervals throughout as the time of showing the work.

5. Demonstration to the group. Demonstration to the class on a group is thought to be the best procedure. This should be done before individual projects are undertaken, with later reassessed undertaking to the group as a whole to maintain unity.

6. Assessment: a reasonable, balanced evaluation of the home activity should be sought. Any lowering assessment would well accompany the demonstration, and would prevent more effective learning and growth. Individual introducing should follow the demonstration in the whole class, with accompanying labor instructions to the group. It should be remembered that it is highly desirable to avoid copying on their own home from the skills will be able to assimilate.

Telephone and Written Work

It is not considered helpful to require the keeping of assessments, although, of course, pupils may keep them if they so desire.

Service work generally is of no value in the study

course; and it is thought that no home work should be assigned.

Discipline

The nature of shop work requires informal discipline. Freedom of movement and speech should be permitted to an extent which does not interfere with work being done. Neither should it indicate lack of control on the teacher's part, nor lack of respect for the teacher.

Under such conditions, attention to the work, courtesy, and cooperation with others should be stressed. The shop provides an excellent opportunity for the pupil to learn how these factors make his working conditions more pleasant while at the same time, he himself is becoming more mature.

Related Information

Related information should be utilized in the shop program.

One of the most important factors is correlation with other subjects. It is very helpful to the pupil if he can be made to see all the parts in relation to the whole of the unit he is studying. For example, in the study of colonial life, pupils might reproduce in their metal or woodworking shops articles commonly used in colonial homes. Through

[illegible] and it is therefore that we must [illegible] to [illegible].

Mixed-ability

The [illegible] of [illegible] with regards [illegible] intelligence. Transfer of [illegible] and [illegible] should be published [illegible] [illegible] [illegible] with [illegible] [illegible]. Neither [illegible] [illegible] lack of [illegible] on the [illegible] part, nor lack of support for the teacher.

Under such conditions, attention in the [illegible], [illegible] [illegible], and conversations with others should be [illegible]. The [illegible] provides an excellent opportunity for the pupil to learn how [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] at the same time, is usually in [illegible] [illegible].

Related information

Related information should be [illegible] in the [illegible] [illegible].

One of the [illegible] factors in [illegible] are [illegible] [illegible]. It is very helpful to the pupil if he [illegible] is made to [illegible] all the parts in relation to the whole if [illegible] [illegible] to be [illegible]. For example, in the study of [illegible] life, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

this they could learn both the differences between and the similarities in industrial activities of colonial times and those of the present.

The pupil's personal experiences could be brought to bear upon the work he is doing in the shop. Such things as articles to be used in personal grooming could be made, or objects related to his particular hobbies and interests.

Individuals not directly connected with the class but proficient in the fields being studied could be asked to give talks and demonstrations to the class.

Teaching Aids

The inclusion of teaching aids in the organization of a program is very often neglected. However, they form an important part in any course, whether special mention is made of them or not. It is hoped that the aids listed below will be available and helpful to the grade school shop teacher.

1. Blueprints: Blueprints of the projects to be made should be provided for the use of the pupils.

2. Patterns: Although some educators consider the use of patterns detrimental to the encouragement of initiative and originality, it is considered helpful to beginning

this step would lead to the difference between the class
[illegible] in laboratory activities or material items and those
of the student.

The teacher's personal experiences could be brought in
here upon the work by is doing in the shop. Some things as
articles he has made in personal projects would be made, as ob-
jects relating to his particular hobbies and interests.

Individuals not directly concerned with the class
but participant in the fields being studied could be asked to
give talks and demonstrations to the class.

Teaching Aids

The teaching of reading also is the elaboration
of a program in very -Time Employed. Therefore, they fear do
Individual work in any events, whether special assistance is need
of them or not. It is hoped that the site listed below will
be satisfactory and helpful to the grade school shop teacher.

1. Textbooks: Textbooks of the subjects to be
made should be available for the use of the pupils.

2. Dictionary: Library and dictionary consider
the use of personal development to the accompanying of illi-
nois and originality, it is worthwhile helpful to teaching

students of this age to have patterns available.

3. Models: Well-finished models of the different projects should be on hand for the pupils to observe.

4. Wood finishes: It should be helpful to the children for various types of finishes to be displayed in panel form.

5. Motion pictures and slides: These media can be employed to give reliable instruction.

6. Field trips: Well-organized field trips should be made to industrial plants where information relative to the project being studied may be obtained.

7. Library material: Ample library material should be available to fulfill reference requirements.

SUMMARY

Handcraft, correlated with other subjects in the classroom, is recommended for grades one through three. Shops are recommended for grades four through six.

The general shop, in common use, is considered more practical and more valuable than the unit shop for the reason that the former is equipped with a variety of activities to be

physician of this sort to carry problems specialists.

3. Models: Well-finished models of the different products should be on hand for the public to examine.

4. Small Exhibit: An exhibit to be taught in the laboratory of material types of fishes to be displayed in glass boxes.

5. Public pictures and slides: These media can be employed to give valuable information.

6. Field trips: Well-organized field trips should be made to industrial plants where fish-production relative to the program local should and be included.

7. Library material: Main library material should be available to fish-it reference requirements.

SUMMARY

Briefly, experience with fish-tour analysts in the classroom is recommend for grades one through three. Trips are recommended for grades four through six.

The general scope, in common use, is modified more practical and more valuable when the work stop for the reason that the teacher is equipped with a variety of conditions to be

carried on simultaneously or separately, while the latter is equipped for only one type of activity, such as metalworking.

Members of the class, which should be organized on democratic lines, should select their own projects.

Combination type of instruction is desirable, with minor emphasis on lectures and individual instruction, and major emphasis on demonstration to the whole class.

Notebooks, written work and homework are of little or no value in a shop course.

The nature of shop work demands informal discipline, allowing freedom of speech and movement within limits which do not interfere with the work. Lack of control on the part of the teacher and lack of respect for him should not be implied. Attention to the work and courteous and cooperative attitudes should be stressed.

Related information which may be utilized includes correlation with other subjects, personal experiences, and talks and demonstrations from outsiders who have special knowledge of the subject in question.

Although often neglected, teaching aids are most important. The seven aids suggested are:

1. Blueprints

2. Patterns

3. Models
4. Wood finishes
5. Motion pictures and slides
6. Field trips
7. Library material

[illegible]

The problem of how often a given school shop class should most ordinarily be met by the school principal and the teacher. From the results of this study, this writer believes that classes should be held twice a week.

[illegible]

[illegible] pupil must each period last sixty minutes. This is the length of time prescribed by most courses of study.

[illegible] to be Included

The industrial arts program should be extended to include all pupils from the third through the ninth grades, [illegible] as provided in the [illegible] described in Chapter [illegible]. The [illegible] and [illegible] should have an elementary shop

CHAPTER VI

COURSE ORGANIZATION

Class Frequency

The problem of how often a grade school shop class should meet ordinarily is settled by the school principal and the teachers. From the results of the study, this writer believes that classes should be held twice a week.

Length of Class Periods

Again, final determination of the length of the shop periods must be left up to the administration and the instructors. However, if classes meet twice a week, it is recommended that each period last sixty minutes. This is the length of time prescribed by most courses of study.

Grades to be Included

The industrial arts program should be extended to include all grades from the first through the sixth, with assignments to the groups according to their abilities. The fourth, fifth and sixth grades should have an elementary shop

Class Frequency

The problem of how often a given method may class should seem reasonably to authors by the normal pedagogy and the learners. From the results of the study, this writer believes that classes should be held twice a week.

Length of Class Periods

Again, this determination of the length of the day periods must be left up to the administrators and the instructors. However, if classes meet twice a week, it is recommended that each period last ninety minutes. This is the length of time preferred by most students of photo.

Grades to be Included

The laboratory type progress charts is recommended to include all grades from the first through the eighth, only assignments to the group essential to their utilization. The fourth, fifth and eighth grades should have an elementary idea

program, while the lower grades should be given other industrial arts work.

Type of shop work to be given was discussed in detail in Chapters IV and V. It seems advisable to put here a brief summary of the type of handwork most often recommended as lending itself particularly to elementary study.

In their other units the children will be learning about various phases of the three main types of economy[1]--domestic, town, and national. During the domestic period the family unit was self-sufficient, converting nature's products to its own needs. The period of town economy was the handcraft period, characterized by the handicraftsman's directly serving the consumer. The factory economy is the basis of the complicated structure of our present society.

Under each of these economies handcraft could be employed in studying the units on preparation of foods, making of clothing, erection of shelters, making and use of utensils, and tools, and the keeping of records.

Some examples of how these might be utilized would be having the class parch corn when studying Indians, leading

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1. Katharine Elizabeth Dopp, The Place of Industries in Elementary Education. pp. 14-56.

[illegible] while the lower grades should be given other [illegible] work.

Type of study work by the pupils was discussed in detail in Chapters IV and V. It seems advisable to put into a brief summary of the type of learning most often recommended to implement itself particularly in elementary study.

In their other words the children will be learning about primary phases of the three main types of economic[1] activity, namely, not material. During the domestic period the family was self-sufficient, constituting nature's provisions to its own benefit. The period of home economy was the beginning of material civilization by the individuals directly serving the economic. The history economy is the basis of the sophisticated economies of the present society.

Their main of study concerning industrial activity is concerned by studying the ways of preparation of food, making of clothing, erection of shelters, making and use of implements and tools, and the keeping of records.

Some examples of how these ways to activities could be taught the class work some home studying instead, leading

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1. Catherine Atkinson Jenks, The Place of Industrial in Elementary Education, pp. 1-2.

to later study of preparation of modern food, with emphasis on health values.

Primitive articles of clothing (perhaps dressing Indian dolls) might be made, using the same implements the Indians used, and employing the same materials. This would lead to learning how modern textiles have developed and could involve the study of and experimentation with dyes, weaving, etc.

Making models of Indian and Eskimo houses, log cabins, early castles, etc., helps in the study of shelter. Pupils should learn what materials are and were used in building and how they are converted from raw materials to lumber, bricks, cement, and so on.

Studying utensils provides an excellent opportunity for the use of clay. Pupils may model utensils for the class doll or play house, or for use in model villages. Baskets may be woven.

In connection with the keeping of records, pupils might begin by writing on clay tablets. Later they would learn how paper is made and used. Paper tearing, paper cutting and pasting, making posters and booklets would apply to this as well as to many other phases of handcraft work.

The tools primitive man made could be reproduced by

[illegible] by [illegible] of [illegible] that, with [illegible] to [illegible] values.

Transition articles of Christian Lightner [illegible] [illegible] might be [illegible], using the word [illegible] [illegible] word, and multiplying the [illegible] materials. This would lead to [illegible] [illegible] [illegible] [illegible] would [illegible] the [illegible] of [illegible] [illegible] [illegible] [illegible].

[illegible] models of [illegible] and [illegible] [illegible], [illegible] [illegible], [illegible] [illegible] [illegible] [illegible]

the children and used by them in making various articles.

Some other types of activity most frequently recommended for the younger child are making wallpaper stencils, constructing model houses, streets and farms on sand tables, and making animals, toys or games.

This type of handcraft has an almost universal appeal for the young child.

Should Shop Training Be Required?

The study indicates that shop training should be a required subject for boys in the fourth, fifth and sixth grades. However, provision should be made to exempt the very small percentage who are physically or mentally unsuited for the type of work they would be required to do.

Customarily the girls of the same grades have either cooking or sewing while the boys are having their shop class. This system of dividing the classes has been in use for a long time and seems to work out very well. However, it should be remembered that great value is derived from shop training for girls. While such training should not be required of them, it certainly is advisable to make the study optional for girls.

the machines and also by those in making machine activities.

Some other types of activity were frequently recommended for the younger child are making valiquer stands, constructing paint boxes, sewing and fixing on wood tailors, and making animals, toys or games.

This type of handcraft has an almost universal appeal for the young child.

<u>Giving Some Training In Handcraft</u>

The study indicated that play training should be a required subject for boys in the fourth, fifth and sixth grades. However, provision should be made to permit the girls that should participate who are physically or mentally unfitted for the type of work that would be required of them.

Unfortunately the girls of the same grades have either learning or sewing while the boys are learning their play-time. This system of dividing the children has been in use for a long time and seems to work very well. However, it should be remembered that great value is derived from also teaching the girls. This work training should not be neglected at home. It particularly is advisable to make the study optional for girls.

Paying for Materials

It seems that the best plan for meeting expenses is to have each boy pay the approximate cost of his project when he takes it home. School funds should provide materials for pupils who cannot pay.

This policy is in accordance with accepted industrial education ideas and current practices, since it is generally believed that the boys will learn the cost and valuation of materials much better if they are required to pay for what they make.

Grading

There has been much discussion on grading or rating the value of each pupil's attainment. It is generally considered that monthly grades of pupils taking shop should be based on the following factors.

1. Improvement: The improvement each individual has made during the course of study should be considered.

2. Accomplishment: He should be graded partially on what he has actually accomplished during a given time.

3. Knowledge: The amount of knowledge he has acquired should be evaluated.

Policy for Immediate

It seems that the best plan for securing economy is to have each city pay the expenditure over of its certificate than to issue it free. Report that should provide materially for pupils who cannot pay.

This policy is in harmony with conceptual inductive principle and practical problems. Since it is generally believed that the boys will learn the most real training of citizenship from contact of men who are required to pay for what they make.

Summary

There has been made a question of practice by giving the plan of work quite INADEQUATE. It is commonly maintained that activity studies of pupils having may should be based on the following factors.

1. Interest: The experiences and initiative are made during the course if study should be worthwhile.

2. Accomplishment: He should be given opportunity to feel to the industry accomplished during a given time.

3. Challenge: The course of knowledge in the educational should be stimulated.

4. Behavior: This item would include both his conduct in the class and the effort he has put forth on his work.

5. Originality: Development of originality and initiative should be included.

Teaching Load

To maintain a high standard of work, the most effective size class ranges from twelve to twenty-five pupils. According to Professor J. Tammeryn[1], the average class contains twenty-one pupils.

SUMMARY

Recommendations made in this chapter are based on a study of the works of all the leading educators available.

Although length of the shop periods and their frequency are left up to the administration and the teachers, two sixty-minute periods a week are considered desirable.

The first, second and third grades should be given handwork in their classrooms, commensurate with their abilities; and the fourth, fifth and sixth grades should have shop courses.

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1. Professor J. Tammeryn, Director of Industrial Arts Education, Hillsborough County, Florida. June 1948.

6. Leadership. With a [illegible] leadership with his men, [illegible] in the [illegible] and they actively [illegible] the [illegible] of his [illegible].

7. Originality. Improvement of originality and initiative should be [illegible].

Teaching Load

In [illegible] a high [illegible], the [illegible] [illegible] [illegible]

Handwork recommended for the first three grades was based on a study of food, clothing, shelter, utensils, tools, and records, from the past to the present. Suggestions included the preparation of models; and the making of articles with primitive tools.

Shop training ought to be required for boys in the fourth, fifth, and sixth grades. Those physically or mentally unfit for this type of work should be exempted.

Girls generally are offered cooking or sewing, but shop work is of great value to them and should be optional.

Since it is commonly believed that boys will learn the cost and valuation of materials much better if they are required to pay for what they make, it is suggested that each boy pay the approximate cost of his project when he takes it home. The school should pay for materials when the pupil is unable to pay.

Pupils should be graded monthly on the improvement made, accomplishment during the specified period, knowledge acquired, conduct in class and effort put forth, and on his originality.

The most effective size class ranges from twelve to twenty-five, with twenty-one pupils in the average class.

Students recommended to a six hour class period per week for a study of fuel, economics, history, vocational, basic, and technical that has part in the program. Supervision includes the preparation of exhibits and the making of articles with practical tools.

Only technical work is required for boys in the fields, diesel, and block printing. These physically or mentally dull this type of work should be accepted.

With practically non-skilled teaching in mind, the shop work is of great value to those who should be optimist.

Since it is commonly believed that boys will learn the real hard solution of mechanics when helper if they are paid to pay for what they make, it is suggested that some day pay the commodities part of its product when be taken in hand. The normal service pay for materials when the profit is making to pay.

Skills learnt by pupils should be the improvement main, accomplishment during the practical period. Knowledge acquired, conduct in class and effort and thought, and in his originality.

The work affiliates this class range from twenty to twenty-five, with twenty-one pupils in the average class.

CHAPTER VII

SUMMARY AND CONCLUSIONS

General Summary

This study has been an attempt to evaluate the importance of industrial arts in the elementary school--specifically, grades one through six--and to propose a general program which might be adopted by Hillsborough County, Florida.

Statements made are based upon literary research, personal interviews, industrial arts magazines, bulletins, and courses of study from other states.

The remainder of this chapter is devoted to a summary of the principal points made in the body of the thesis, and the conclusions drawn therefrom.

Since the seventeenth century, recognition of the importance of teaching industrial arts in the public schools has been developing in various countries. It has been established that a child learns far more readily and with greater pleasure through a concrete approach to a problem; and that

CHAPTER VII

SUMMARY AND CONCLUSIONS

General Summary

This study has been an attempt to evaluate the performance of industrial arts in the elementary schools--specifically, grades one through six--and to suggest a general program which might be adopted in Williamsburg County, Florida.

Pertinent data are based upon literary research, personal interviews, questionnaires, bulletins, and courses of study from other states.

The remainder of this chapter is devoted to a summary of the principal points made in the body of the thesis, and the conclusions drawn therefrom.

Since the nineteenth century, emphasis of the importance of teaching industrial arts in the public schools has been developing in modern curriculum. It has been established that a skill learned for more reality and with greater pleasure through a concrete approach to a problem, and that

through industrial arts, his fundamental urge to create is led into useful channels.

It is hoped that the points made in this thesis may be found to be of value to the teaching profession.

Frederick G. Bonser's definition of industrial arts is considered the best, and is widely quoted by most sources, i.e., "As a subject for educative purposes, industrial arts is a study of the changes made by man in the forms of materials to increase their values, and of the problems of life related to these changes."[1]

Industrial arts is closely allied with fine art, but may be distinguished from it by the fact that industrial art is concerned with the creation of utility, while fine art is concerned with the creation of beauty without regard for utility.

History of Industrial Arts Development

A general historical review of industrial arts was considered necessary in order to understand the present problem in Tampa, since many of the problems of the past are still apparent here.

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1. Frederick G. Bonser and Lois Coffey Mossman, Industrial Arts for Elementary Schools. p. 5.

through industrial arms, his statement may be speaks in the same useful manner.

It is hoped that the points used in this thesis may be found to be of value in the marketing questions.

Professor G. Hosser's definition of industrial arts is considered the best, and is widely quoted by most authors. Hosser has a method for educative purposes, industrial arts is a study of the manner such by man in the form of materials to increase their values, and of the conditions of life, relative to these changes.[1]

Industrial arts is closely allied with fine arts. The may be distinguished from it by the fact that industrial art is concerned with the question of utility, while fine art is concerned with the question of beauty, while fine art is concerned with the question of beauty without regard for utility.

<u>Relation of Industrial Arts Instructor</u>

A general historical review of industrial arts was considered necessary in order to concentrate the research problem in proper. Since many of the problems of the past are which applicable here.

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1. Frederick G. Hosser and John Shirley Bussom, <u>Industrial Arts for Elementary Schools</u>, p. 2.

Since the beginning of mankind, there has been some form of industrial arts education. The earliest type of such education was father-to-son training, which was supplanted, as society became more complex and certain vocations came to demand more skill, by apprenticeship. Apprenticeship, in turn, was out-moded when the modern factory system developed.

Johann Amos Comenius was the founder of the modern theory of industrial education as an integral part of formal education. Other pioneers recognized the importance of such training. Finland and Sweden incorporated handwork in their public schools before the United States made any move toward introducing manual training courses. Exhibits at the Philadelphia Centennial were of primary importance in establishing the teaching of industrial arts in public schools here.

Four stages are said to have developed in this country, the Russian or Abstract Stage, the Swedish Sloyd Stage, the Arts and Crafts Stage, and the Industrial Stage, which last began after the turn of the twentieth century and is still influential.

Tampa's first shop program was organized in 1907. Now every high school in Hillsborough Country has a modern industrial arts program, but the subject is taught in not one of the elementary schools.

Since the beginning of mankind, there has been some form of industrial arts education. The earliest type of such education was tribal-house training, which was unsystematic, as society became more complex and artists specialized, an apprentice became more skilled, by experimentation. Apprenticeship is being now replaced with the modern factory system development.

Schools have changed and the function of the modern school. Many of industrial education as an integral part of school education. Other changes recognized the importance of such training. Richard and Dewey introduced technical training in their policy schools before the United States made any move toward industrial training. Definition of the public schools industrial work of primary importance in substituting the development of industrial arts in public schools here.

Very things can will be been developed in this program. The Dewey or Richard Plan, the Smalley Plan, the Bonnie Plan, the Dale and Jarvis Plan, and the Individual Plan. Make have after the work of the Industrial training and is still functional.

Dewey's Plan was prepared and organized in 1907. The great high school in Gilmanton County has a modern industrial arts program, but the program is lacking in part the of the elementary schools.

Objectives

A compilation was made of the important goals to be sought in the study of industrial arts in the elementary grades, as advocated by leading authors and teachers. These aims are as follows:

Learning to be useful around the home: The home is the basic unit in society to which the pupil belongs, and happiness in his immediate enviroment is dependent upon his own usefulness and importance. These attributes certainly can be enhanced by his ability to make worthwhile contributions to the family welfare.

Learning to plan and organize work: Participation in planning and organizing the work in advance of beginning the actual project will help the pupil save time and avoid wasteful mistakes, which will not only aid him in school, but will help him to perform any job he may hold in the future.

Learning habits of neatness and order: These habits, if established painlessly in youth, will survive through adulthood, making the pupil more valuable to industry and more successful in conducting his personal life.

Acquiring a hobby: The pupil should have an opportu-

Conclusions

A modification and basis of the beginner's goals to be sought in the study of industrial arts in the elementary grades is achieved by limiting outcomes and boundary. These aims are as follows:

Learning to be useful around the home: The home is the basic unit in society so using the pupil behavior, and knowledge in the immediate environment is important since it has more future and importance. These activities evaluatly can be enhanced by his ability to make worthwhile contributions to the family welfare.

Learning to plan and organize work: Participation in planning and supervising the work in accordance of beginning the school project with help the pupil have time and would material available. What will not only help him in school, but will help him in practice and get in our life in the future.

Learning habits of neatness and safety: These habits, if constructed relatively in young, will develop strong habit-bond, making the pupil more valuable in industry and more successful in conducting his personal life.

Learning a hobby: The pupil should have an opportun-

nity for surveying the possibilities of many fields, any one or more of which may become a hobby for him which will be the source of much interesting and perhaps profitable activity.

Learning to recognize and appreciate good workmanship: This quality is essential to him as a consumer of goods, and as a future craftsman or producer.

Making a project to take home: It will help the student to achieve a real interest in his surroundings and a cooperative attitude toward his home if he is allowed to make such projects.

Exploring various fields of an industrial nature: Through industrial arts the pupil should acquire a fundamental knowledge of the functions and methods of industry, and the problems and relationships of the people involved.

Learning to appreciate the beauty and value of nature: Though industrial arts concerns itself with the changing of nature's products, it presents ample opportunity for learning to appreciate nature's beauty and its intrinsic value as well as its converted value.

Trade training is not to be considered as an aim in elementary school education, although the industrial arts pro-

with the exploring the possibilities of many fields, may one or more of which may demand a lifetime for his whole skill in the service of most laboriously and endless productive activity.

Learning to recognize our responsibilities and methods.

Ely: This reality is manifest in his as a consumer of goods, and as a future craftsman or producer.

Making a program to help them: It will help the student to believe a real interest in all participations and a constructive attitude toward its home if he is allowed to make some projects.

Developing concrete vision of an industrial society: Younger industrial arts the pupil should acquire a functional knowledge of the functions and nature of industry, and the rights and responsibilities of the people involved.

Learning to recognize the beauty and value of industry: Though industrial arts concerns itself with the economy of everyday business, it promotes basic appreciation for leading to appreciation industry's beauty and the intrinsic value as well as its converted value.

This material is not to be considered as an end in elementary school education, although the industrial arts curr-

gram will provide a sound foundation for later training.

Selection of Subject Matter

The following general subjects and units under them, presented in outline form, were most representative of recommendations made by authorities on the subject, and of courses in actual use in other schools.

A. Woodworking

1. Small items of furniture
2. Coping saw projects
3. Whittling and carving
4. Wood burning
5. Toy repairing and making
6. Wood decorating and painting

B. Household electricity

1. Bells and buzzers
2. Transformers
3. Repairing electrical appliances
4. Electric soldering

C. Metalworking

1. Sheet metal
2. Tin can craft
3. Sand molding

you will provide a good foundation for final training.

Selection of Subject Matter

The following general subjects and only major items presented in detail. Note how most representations of phenomena made by combination or the whole, and if desired it would be well to allow groups.

A. Industrial

1. Small items of furniture
2. Coping saw projects
3. Repairing and painting
4. Wood burning
5. Tie-repairing and making
6. Wood decorating and painting
7. Household activities

1. Sofa and hammock
2. Hammocks
3. Inexpensive electrical equipment
4. Kimonos and aprons

B. Metalworking

1. Sheet metal
2. Tin can craft
3. Sand molding

D. Units in drawing

1. Making simple drawings
2. Elementary designs
3. Blueprinting
4. Freehand sketching
5. Reading and working drawings
6. Cartooning
7. Sketching and drawing small projects
8. Posters

E. Household mechanics

1. Repairing household equipment
2. Painting screens, fences, etc.
3. Hanging and removing screens
4. Puttying and repairing glass
5. Fixing leaking faucets

F. Introductory carpentry unit

1. Visiting building under construction
2. Learning about different types of building material
3. Learning about building designs

G. Miscellaneous crafts

1. Leathercraft
2. Alabaster

5. [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]

6. [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

7. [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

8. [illegible]

1. [illegible]
2. [illegible]

3. Molded plastic
4. Paper craft
5. Bookbinding
6. Weaving
7. Pottery
8. Puppet-making
9. Dioramas
10. Map making
11. Lantern slides
12. Soap carving
13. Scientific apparatus and models

II. Gardening

1. Selecting and preparing ground, learning types of soil and suitable locations
2. Figuring cost of seed, fertilizers, and insecticides
3. Planting seeds and caring for plants
4. Harvesting and marketing vegetables and fruits
5. Selection and care of tools

Method of Teaching Industrial Arts

Two methods of teaching industrial arts are recommended for the elementary school. Classroom handwork, corre-

3. Sewing pillows
4. Paper craft
5. Bookbinding
6. Weaving
7. Pottery
8. Puppet-making
9. Drawing
10. Dog walking
11. Lantern slides
12. Soap carving
13. Photography-processing and models

2. Gardening

1. Gardening and preparing ground, learning types of soil and suitable locations
2. Planting seeds in sand, fertilizers, and insecticides
3. Planting seeds and caring for plants
4. Harvesting and storing vegetables and fruits
5. Selection and care of tools

Method of Teaching Industrial Arts

The methods of teaching industrial arts are recommended for the elementary school. Classroom lessons, activi-

lated with other studies, is advised for the grades one through three. It is thought that pupils in grades four through six are sufficiently advanced for simplified shop work, as a preliminary to later advanced training.

Of the two types of shop possible, the general shop which is in common use is considered more suitable, since it is equipped for a variety of activities, to be carried on either separately or simultaneously. The handicap of the other type, the unit shop, is more or less obvious when it is understood that this shop is equipped for only one activity.

There should be a variety of projects available in consecutive units. Members of the class should not be forced to work on the same project at the same time, and individuals should be given the privilege of exercising choice of the project to be undertaken. Democratic principles should govern the conduct of the shop, with the teacher acting merely as an adviser, not a dictator.

Lectures are considered the least desirable method of teaching in the shop, since the pupils will learn far more from, first, seeing the work done, and then doing it themselves. There should be a demonstration to the whole bunch before individual projects are undertaken, with any lecturing necessary to accompany this. Later, individual instruction will be desir-

Indeed with sleep problems, it stands for the greater too intensive study. If it should well people in studies that therapy is not sufficiently enhanced for sleepless sleep study, as a preliminary to later advanced training.

Of the two types of sleep problems, the general study which is so common was in unemployed more activities, since it is employed for a variety of activities, be to material or client supervisory or educationally. The handicap of the other type, the self sleep, is more in this interview when it is necessary that this sleep is enjoyed the only the activity.

Sleep should be a variety of employee available in accessible units. Employees of the place should not be forced to work on the same patterns at the same time, and individuals should be given the privileges of accepting circumstances of the journal to be accepted. Inconvenient patients should provide the workers of the sleep, with the longer working merely be in activity, not a lifetime.

Analyses are accomplished the least desirable method of learning is the sleep, since the people will leave the sleep first, first, saving the work time, and then using it thereafter. There should be a harmonization to the whole based factors individual problems and conditions, with any increasing necessary to encourage this. Later, individual handicaps will be limited

able, with checking of the work at logical intervals designated at the time of planning each project. There may be occasional instructions to the whole group in order to maintain unity.

Notebooks, class written work, and homework are considered of little or no value in a shop class.

The nature of shop work demands informal discipline, with freedom of speech and movement to an extent which does not interfere with work being done. Discipline should not be so lax that it implies loss of control on the teacher's part, nor lack of respect for him. Points to be stressed are attention to the work, and courteous and cooperative attitudes.

Related information which should be utilized in connection with the shop course would include correlation with other studies (which, for example, might be achieved through having the class make articles used in colonial homes while colonial times are being studied in other classes); personal experiences; and demonstrations and talks by people outside the class who are proficient in the fields under consideration.

The often-neglected teaching aids are very important in the organization of a program. Teaching aids which should be available include blueprints, patterns, models, wood finishes, motion pictures and slides, field trips, and library material.

Course Organization

Although final determination of the problems of number and length of shop classes must be left up to the judgment of the administrators and instructors, results of this study indicate that two sixty-minute periods a week are desirable.

As has already been mentioned, it is thought that the industrial arts program should be extended to include all grades from the first through the sixth, with handwork in the rooms for the first three grades, and shop classes for the others.

The shop program already has been summarized. Handwork for the younger children might be based on the three periods of economy--domestic, town, and national--employing various types of simple handcraft under each of these economies in the study of foods, clothing, shelter, utensils, tools, and the keeping of records. Suggested activities included simple cooking and sewing, the making of model houses, villages, and streets, clay utensils, and primitive tools which could be utilized in making projects, writing on clay tablets, and the use of many types of paper work. Such handcraft not only has a universal appeal for young children, but it also provides them with a well-balanced background for later detailed study of the industrial arts.

[illegible]

Although that determination of the problem of economy and hands of the classes must be left up to the judgment of the administrators and legislators, results of this study indicate that [illegible] provide a very low [illegible].

As has already been mentioned, it is thought that the commercial arts junior school be extended to include all courses from the first through the sixth, with emphasis in the second and the first-three grades, and only choose the [illegible].

The many problems already has been considered, but the one problem which must be faced is the [illegible] problem of economy--monetary, time and [illegible] [illegible] type of single industrial labor [illegible] in the study of [illegible] electricity, electrics, mechanics, metals, and the lacking of [illegible]. Supposed activities involved [illegible] making and making of model [illegible], and [illegible] may [illegible]. [illegible] which would be realized in getting [illegible] without [illegible], and the [illegible] of [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] with a multiplication [illegible] the junior [illegible] study of the industrial arts.

Boys in the fourth, fifth and sixth grades should be required to take shop training, exempting only the small percentage physically or mentally unfit to do the work. Although girls have generally taken cooking or sewing while the boys were having shop work, such a course would be of great value to them, and should be optional.

The best plan for meeting expenses appears to be to have each boy pay for his project when he takes it home, in order to give him an understanding of the value of materials. School funds should provide materials for pupils who cannot pay.

In the monthly rating of shop pupils, the factors which should be taken into consideration are the improvement each pupil has made; what he has accomplished; how much knowledge he has acquired; his conduct and effort; and his originality.

The most effective size class ranges from twelve to twenty-five pupils, with twenty-one in the average class.

CONCLUSIONS

The conclusions drawn from this research substantiate the theory that the elementary school pupil, his teacher, and his community, will benefit in many ways from the study of in-

Both in the Fourth, Fifth and Sixth grades pupils should be required to take play seriously, accepting fully the small grown-up obligations or responsibility which go to make up the world. Although girls more generally taken nursing or sewing while the boys are doing other work, such a course would be of great value to them, and should be optional.

The best plan for teaching manners appears to be to have each day set apart for this purpose when to take it from, it before to give the relativity of the value of manners. Short talks should provide material for pupils the course for.

In the monthly rating of each pupil, the teacher might consider to follow their manifestation and the improvement and would the teacher need be the necessitating the such teachings to the morphosis his conduct and efforts and life environment.

Two more effective also other means from teaches to transmitted pupils, such manners in the school class.

CONCLUSION

The conclusion drawn from this research substantiate the theory that the elementary school pupil, his teacher, and his parentage, will benefit in very much from the study of the

dustrial arts, and it is recommended that an organized industrial arts program be inaugurated in the first six grades of the Hillsborough County schools.

One of the dominant elements in the young child is his necessity for motor activity. Channeling such activity along guided and intelligent paths, with progressive steps designed to make allowances for his increasingly finer coordinations and skills, is necessary if his energies are to be directed toward creating of him a mature person, capable of performing the tasks which will beset him on all sides. He is possessed of a fundamental urge to create, with his brain, certainly, but primarily with his as yet undeveloped hands. The first-grade child finds himself in relatively the same position as was primitive man with respect to his knowledge of and ability to use simple tools in a creative manner. As he grows older, his abilities evolve in the same way mankind's abilities have evolved; he needs to be set at tasks which are constantly becoming more complicated, commensurate with his physical and mental progress, to prevent stagnation. Research has proved that the child actually can learn more by doing things than he can by reading or hearing about them. Concrete experience is necessary before he can grasp abstractions with any facility.

Cultural level, and it is remarkable that so elegiac descriptions are present in Dmitriyev's in the first six years of his literary career.

One of the dominant elements in the poetry which is his necessity for outer activity. Dissatisfied with solitude, after quiet and intellectual pursuits, with reminiscences rings enough to suit eighteen. For his heretofore fluent versification and ability, in consequence of his exercise was to be directed toward creating of his a native poetry, regardless of practicality the house which will house his or his style. He is reminded of a Chekhovian hero in creative, with his inertia, mechanicity, but optimistic-like in yet modernized lacks. The difference which there lowered in relatively his some conditions as one protagonist was with respect to his knowledge of and ability to use classic texts in a creative manner. In his given view, his activities owing in the same way analogical activities were entirely in great to be put of texts which are analogically however long neglected, nevertheless are his digital and musical-rhythms. In perfect chronicles. However may proved that the which actually are learn have to using things that he was by reading to having stack time. However experience is necessary before he was great experiences with any facility.

There are many desirable qualities which an industrial arts program tends to foster in the child. It encourages individual initiative and originality, while emphasizing the necessity for courtesy and cooperation with others. Helping in class projects prepares him for an understanding of the complicated interdependence of all peoples in the society of today. He gets an insight into the structure of industry as it developed from its primitive origin--through simple projects with correlated study--leading to more complicated projects.

If the pupils in the early grades are given proper foundations for later work, certainly those in the fourth-sixth grades will be ready for more advanced work which can best be given in the shop.

The community will benefit from an elementary school industrial arts program which diverts energy which might become destructive if left unguided, to channels which encourage the development of useful, happy citizens. These children will become the discriminating consumers, skilled craftsmen, and intelligent, conscientious producers on whom the community tomorrow will depend.

Too, industrial arts tends to stimulate interest in the home, and in the acquisition of hobbies which provide happi-

ness. A capable, happy, mature citizen, who understands the intricacies of society, certainly is more of an asset to the community than the disgruntled misfit who can contribute nothing to the general welfare.

The teacher at the least will derive a great deal of personal satisfaction from seeing his classes mature under his tutelage, and become cooperative and constructive individuals. It should make his teaching job far easier when lessons are presented in terms the class can readily understand.

Although Tampa has recognized the importance of industrial arts education in the higher grades, in the light of this research it seems that a program for the first six grades also should be integrated into the curriculum. The purpose of elementary school education is to impart general knowledge and training which will be of equal value to all students. If this aim is to be achieved, surely industrial arts should be an integral part of the teaching program.

The writer hopes that this thesis may have contributed at least some helpful suggestions in clarifying the function of an industrial arts program and evaluating its importance to the elementary school.

APPENDIX A

There is reproduced below a copy of materials and [illegible] in a children's [illegible] class in which some [illegible] from the consideration of humanity in a class project.

[illegible]

[illegible]

A. To provide situations in which the children have something to say and the opportunity to say it.

B. To induce children's interests.

C. To promote the expression of children's [illegible]

D. To [illegible] the [illegible] [illegible] path.

E. To develop a reading [illegible] of the [illegible]

[illegible]

APPENDIX A

There is reproduced below a copy of material employed by a teacher of the 2A grade in Chicago which exemplifies the correlation of handwork in a class project.

Chapter V[1]

A PUBLIC PARK

By Marjorie Reich

Orr School Grade 2A

Objectives of the Unit

A. To provide situations in which the children have something to say and an opportunity to say it.

B. To widen children's interests.

C. To promote the maturation of Children's social responses in normal situations.

D. To acquaint them with the nearest neighborhood park.

E. To develop a working knowledge of the neigh-

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1. William H. Johnson, The Craft Techniques as an Integral Part of Teaching Method. Chicago Public Schools Bulletin. pp. 34-39.

borhood transportation.

F. To instill a sense of civic responsibility.

G. To lead children to an appreciation of and a desire for certain knowledge and skills which require for mastery, routine or drill work. (The three R's.)

Method of Introduction

During a class discussion the children began to speak of their summer outings. Each told about what he enjoyed most at a picnic, until enthusiasm reach [sic] such a peak that several youngsters suggested that we have a picnic of our own.

Organization

A. How the Project Was Developed

1. Class.
   a. Discussion.
   b. Letter writing.
   c. Deciding what committees were needed.

B. Individuals.

1. Suggested games.
2. Brought in pictures.
3. Read related material.
4. Gave oral compositions.

C. Committees.

1. Routine for the day.
2. Lunch (proper food).
3. Transportation.
4. Social niceties to observe.
5. Games to play.
6. What things to notice.

D. Teacher.

1. Class.

a. Made booklets, telling the story of the trip or related incidents (illustrations, compositions, and writing).

b. Gave their own impressions of the day through the use of art media: painting or clay modeling.

2. Individuals.

a. Made beanbags to use in games.
b. Collected pictures and made individual scrapbooks.
c. Made puppets to use in story-telling.
d. Made pottery after seeing and becoming interested in a huge clay pile en route to the park.

3. Committees.

a. Made a neighborhood map.
b. Made placards displaying lunches.
c. Worked out table panorama [sic], showing the park, the lagoon, the bridge, the Administration Building, the conservatory, and the open spaces with tables, benches, trees and shrubs.

4. Teacher.

a. Make a diorama of a winter park scene (later) showing children feeding the birds to awaken children's interest in seasonal changes in our environment.

b. Made several puppets for shy children to use in telling stories.

Educational Outcomes of Unit

A. Social and Civic.

E. Theatre.

F. Class.

a. Take field trips, noting the story of the play or related incidents (illustrations, films, demonstrations, and written).

b. Have their own impressions of the day through the use of art media: painting or other media.

G. Individual.

a. Make tableaux in groups.
b. Individual pictures and make tableaux presentations.
c. Make puppets to use in show-building.
d. Make pottery after seeing and hearing demonstration in a shop like this or made by the pupils.

H. Summary.

a. Make a multigraphed map.
b. Make summary describing incidents.
c. Mounted and hung pictures (art) showing the people, the lagoon, the village, the administration building, the storerooms, and the open spaces with animals, hammocks, tents and stands.

I. Teacher.

a. Make a library of a dozen pamphlets (based) showing additions through the ships to modern civilization. Interest in material changes in our environment.

b. Make several purchases for my children to use in building dioramas.

Immediately concerns of me:

a. Social and Civic.

1. Each child is learning to realize his place in the world as an individual working toward his own desires and as one of a group working toward group ideals with a sense of civic responsibility that colors every situation.

2. Each child is growing in the ability to choose the best response to every arising situation.

   a. How to treat public employees and other workers.
   B. Proper behavior toward classmates.

B. Physical.

1. Every opportunity for stressing health rules is being utilized.

   a. Outdoor play--fresh air.
   b. Proper clothing.
   c. Proper food (lunch).
   d. Careful play.

2. Safety is being discussed and pictured.

   a. Crossing streets.
   b. Observing traffic signals.
   c. Riding in street cars and automobiles. Careful of windows and doors--good brakes.
   d. Vigilance against destruction by fire.

C. Creative.

1. Children are growing through personal expression.

   a. Oral compositions are more to the point.
   b. Written compositions are well thought out and often practiced.
   c. Constructive efforts are planned, and sometimes make necessary further study.
   d. Each attempt is leading to a more apt and clearer interpretation of the individual

7. Does child is learning to develop his place in the world as an individual embodying the qualities and patterns of one of a group member group (Ideals into a sense of state responsibility that endows every citizen which.

8. Does child be growing in her ability to assess his own personal or group values (qualities.

9. How to have skills equipment and other materials.
10. Trying however every characteristics.

E. Physical.

1. Every opportunity for developing healthy social is being exploited.

a. Outdoor play—fresh air.
b. Proper clothing.
c. Proper food (meals).
d. Careful play.

2. Safety is never disregarded or ignored.

a. Immediate attention.
b. Immediate medical signals.
c. Calling in trained help but responsibility.
Insert of schools and Board—good training.
d. Training—careful instruction by Pres.

F. Emotive.

1. Children are growing healthy feeling security tension.

a. Just appreciation are seen in the point.
b. Active participation are well through and often prescribed.
c. Immediate efforts are planned, and assessment made necessary further study.
d. Good behavior in leading to a more joy and sincere interpretation of the individual

thought or idea.

2. Group expressions are modified and influenced by the group.

D. Academic.

1. Number Work.

a. Map making led to an appreciation of size and proportion as well as necessitated the counting of blocks and the use of the ruler in laying out a plan.

b. The construction of a round dome for the administration building was quite a puzzle until it was suggested that the dome looked like half an orange and the orange peel was cut in sections.

c. Score marking in games necessitated addition and subtraction drill.

2. Reading and Phonics.

a. The project led to a wider interest in all things which could be satisfied in part by books, magazines and papers.

b. Reading and phonics became desirable studies because the children began to realize they were keys to satisfaction in the book world.

3. Writing and Spelling.

a. Growth in social relations led to the desire for the approval of and good fellowship of companions.

b. Letter writing and story telling necessitated clear, legible handwriting and proper spelling.

Thought to Line.

B. Group expressions are modified and influenced by the group.

C. Leadership.

1. Teacher Task.

a. Map reading led to an appreciation of size and proportion as well as necessitated the counting of blocks and the use of the ruler in drawing out a plan.

b. The construction of a round dome for the administration building was quite a problem until it was suggested that the dome looked like half an orange and the orange peel was cut in sections.

c. Group working in pairs necessitated skill, tact and submission drill.

2. Reading and Phonics.

a. The project led to a wider interest in all things which could be utilized in part by lower, negroes and juniors.

b. Quality and quantity became desirable. Pupils because the problems began to interest them they were keen to utilize in the best way.

3. Writing and Spelling.

a. Travel in verbal initiative led to the desire for the approval of and good fellowship of companions.

b. Letter writing and story building necessitated plans, letter formation and the proper spelling.

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